2025 Vision Initiative Implementation Plan

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Overall Strategy

- **A three phase approach:**
  - Phase 1 - Identifies user requirements
    - End product is a statement of prioritized Science and Application goals.
  - Phase 2 - Identifies capability needs
    - End product is the identification of promising technologies or technology areas.
  - Phase 3 - Starts investments on crucial technology categories
    - End product is technology investments linked to vision needs.

Phase 1 – Identify User Requirements

- **Establish stakeholder and partner relationships.**
  - NOAA, USGS, FEMA, DOE, etc..
  - Investigate possibility of International (IGOS) partners.
- **Task groups review Workshop I and II products to refine proposed Science and Applications capabilities.**
- **Economic benefits of proposed capabilities are studied.**
- **Technology feasibility studies (parametrics based) are performed.**
- **Focused workshops integrate capabilities and cost/benefit results to define science and applications goals & priorities.**
- **Science goals are documented and reviewed.**
  - Task groups produce white papers that describe:
    - Science and Application goals, and their priorities.
    - How these goals address public and stakeholder needs.
- **End product is a statement of prioritized Science and Application goals.**

Phase 2 – Identify Capability Needs

- **Perform studies that develop:**
  - Notional scenarios for the primary goals.
  - Implementation concepts for the proposed scenarios.
  - Candidate end-to-end architectures.
- **Perform system analysis to identify technical needs and capability gaps. These studies address:**
  - Scenario and architecture sensitivities.
  - Systems-level technical drivers.
- **Investment goals are documented and reviewed.**
  - Task groups produce reports that describe investment opportunities (with priorities).
- **End products are:**
  - A recommendation for development of specific technologies or technology areas
  - Updated Enterprise Science Plan.

Phase 3 – Portfolio Implementation

- **Initiate competed investment opportunities.**
  - Use existing technology-development venues (SBIR, STIR, IIP, etc.).
- **Initiate directed (non-competed) investments for:**
  - Selected high-priority or high-payoff technologies.
  - Top-level “foundation” technologies such as:
    - Architecture building blocks (e.g., autonomy, inter-operability).
    - System interfaces.
    - System standards.
- **Conduct focused technical studies.**
  - Refine and characterize specific technical aspects of architectures.
  - Identify and resolve top-level system trades.
  - Identify crucial interfaces and standards.
- **End product is a visions driven technology investment portfolio.**

Backup Slides

Science Study Topics

- **Definition of science needs and challenges.**
  - Primary areas of research and applications interest.
  - Proposed performance capabilities.
  - Present barriers to desired capabilities.
    - Could be lack of “knowledge” or lack of “widgets”.
- **Science review of:**
  - Science goals vis-à-vis technology metrics.
  - Science impact of proposed technological approaches.
- **Development of concepts for future observation and applications scenarios.**

Technical Study Topics

- **Technology review of:**
  - Technology metrics vis-à-vis science goals.
  - Technology implications of proposed science goals.
- **Implementation scenarios of envisioned capabilities.**
  - Implementation of new concepts and architectures for observations and applications.
- **Develop and characterize notional architectures.**
  - Identification of key system-level trades.
  - Identification of key interfaces and standards.
  - Scenario and architecture sensitivities.
- **Technology state-of-the-art vs. desired 2025 state.**
  - Gap analysis of future needs vs. existing and anticipated mid-term (~2010) capabilities.